Bridging the gap between drug discovery and synthetic biology: an alkaloid case study

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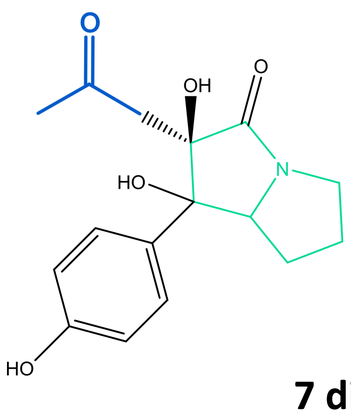
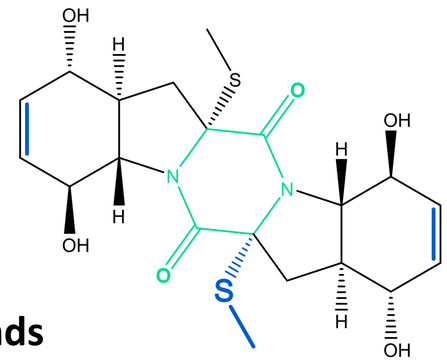
Introduction

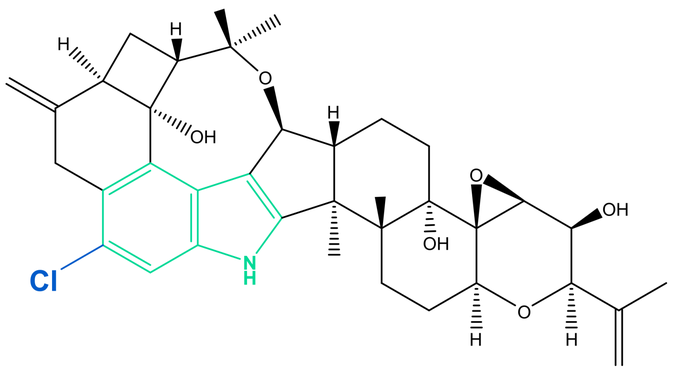
Microbial cell factories provide an interesting alternative to current extraction or chemical synthesis processes for the production of newly discovered compounds[1]. The **choice of the microbial production host** depends on both the identified molecule and the biochemical synthesis pathway. Here, we present an alkaloids case study from our recent review about all novel antimicrobial alkaloids discovered in marine fungi since 2015[2].

Newly discovered alkaloids

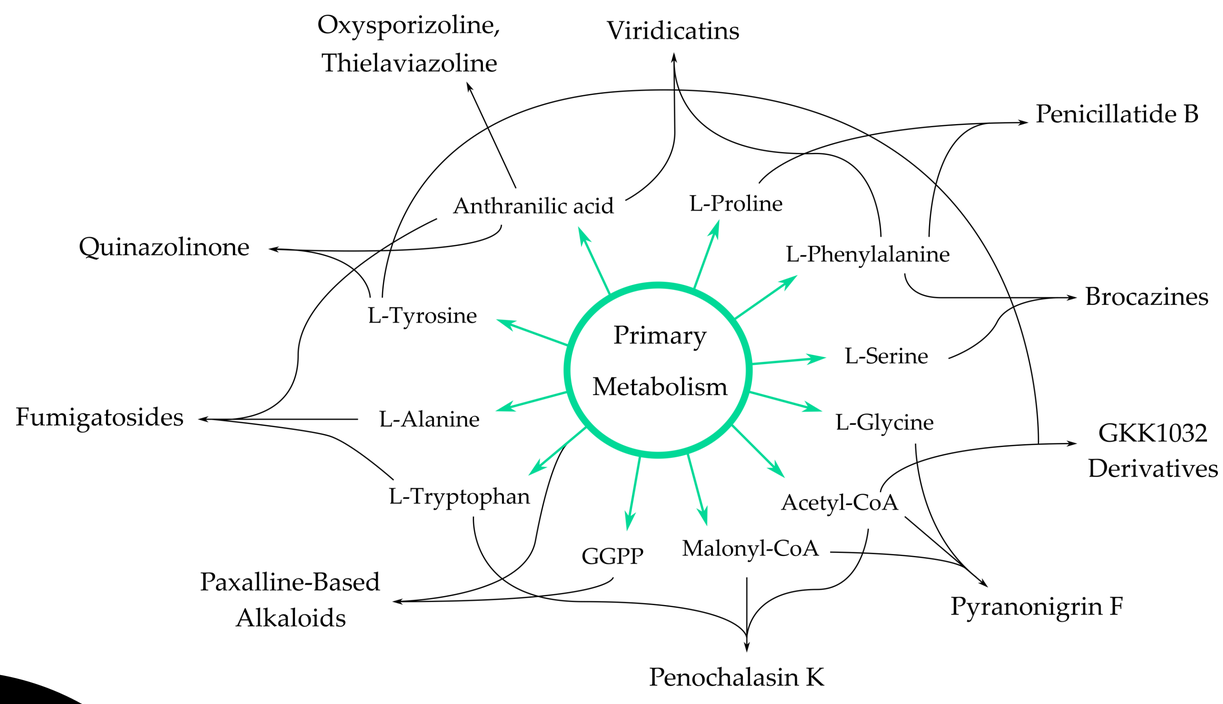




35 compounds
7 different alkaloid classes



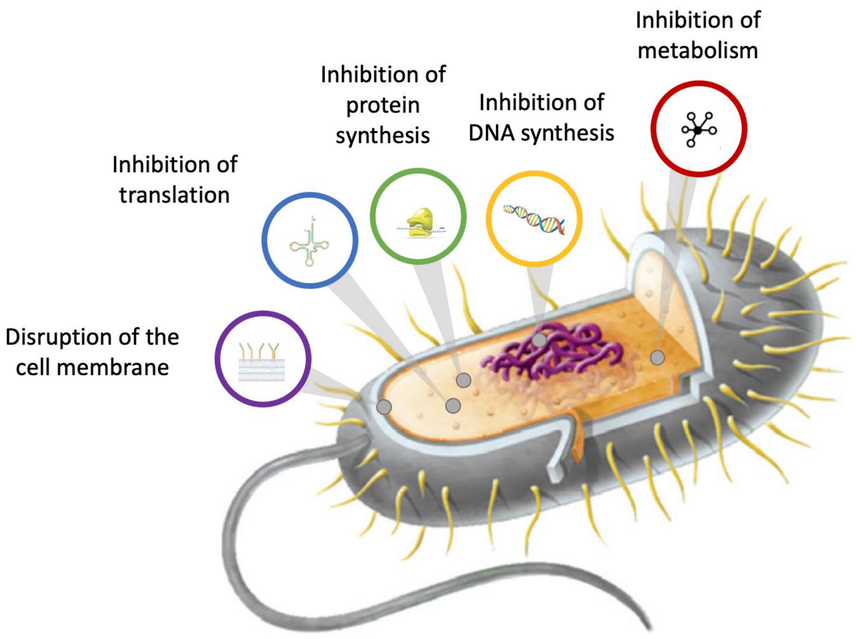
Biochemical production pathways

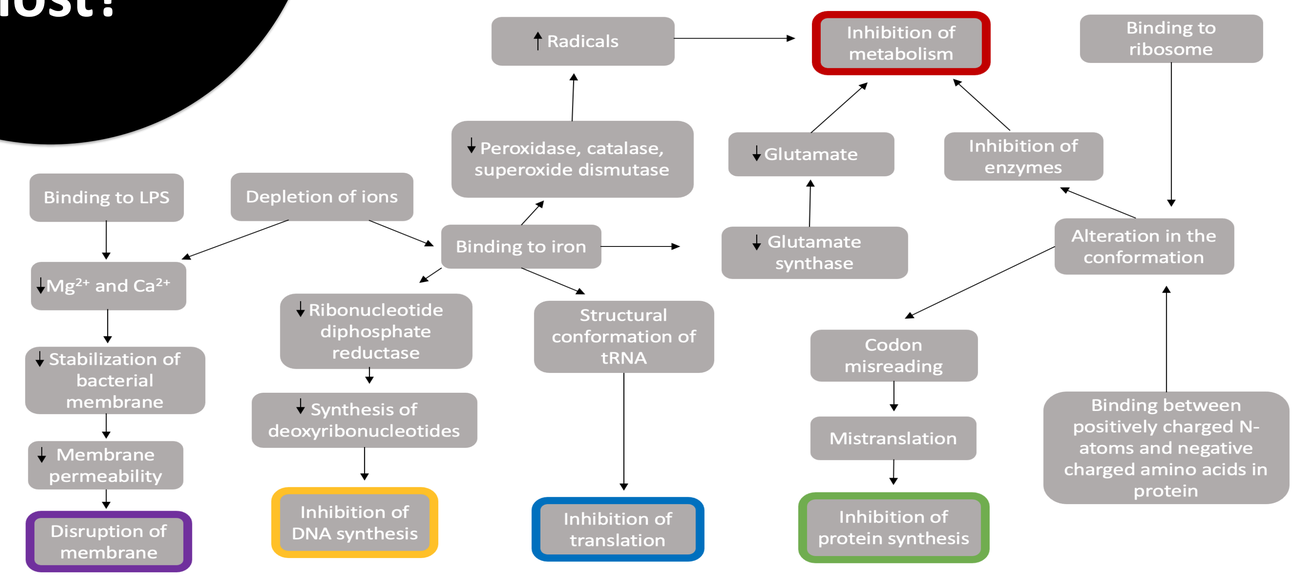


Proposed biochemical origin

Optimal microbial production host?

Antimicrobial effects





Conclusions

- ✓ Biochemical hiatuses
- ✓ Structure-activity studies required
- ✓ Possible correlation antimicrobial activity and other bioactivities

Collaboration?

Feel free to contact us for any information regarding this research or for collaborations!

Or check out our website: www.inbio.be

References

[1] De Mol, Snoeck, *et al.* (2018). Biotechnology Advances, 36 (8): 2201-2218
[2] Willems, De Mol, *et al.* (2020). Antibiotics (MDPI), 9 (6): 340

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